

What is claimed is:

1. A mobile robot using an image sensor, comprising:  
an image capture unit for photographing the bottom surface according to  
5 motion of a mobile robot at a certain intervals and capturing images;  
a displacement measurer for measuring displacement about the captured  
image; and  
a microcomputer for outputting an actual moving distance by direction and  
motion of the mobile robot on the basis of the measured displacement value.

10

2. The mobile robot of claim 1, further comprising:  
a memory for storing images outputted from the image capture unit; and  
a comparator for comparing an image presently outputted from the image  
capture unit with a previous image stored in the memory.

15

3. The mobile robot of claim 2, wherein the displacement measurer  
measures a moving path of pixels of an image of each frame outputted from the  
comparator.

20 4. The mobile robot of claim 1, wherein the image capture unit  
captures an image of the bottom surface having 18\*18 pixel and 64-degrees  
brightness by 1500 frames per second.

5. The mobile robot of claim 1, wherein the image capture unit  
25 includes:

a luminous diode for irradiating light;  
a light guide for guiding the irradiated light; and  
an image sensor for capturing an image about the bottom surface by  
sensing intensity variation of light reflected onto the bottom surface through a light  
5 lens according to motion of the mobile robot.

6. A method for measuring a moving distance of a mobile robot by  
using an image sensor, comprising:

photographing the bottom surface according to motion of a mobile robot at  
10 a certain intervals and capturing an image;  
measuring displacement between the captured images; and  
outputting an actual moving distance by calculating direction and motion of  
the mobile robot on the basis of the measured displacement value.

15 7. The method of claim 6, further comprising:  
storing the captured image.

8. The method of claim 6, wherein the image is divided into a certain  
pixels in the image capturing step, each pixel receives light reflected onto the  
20 bottom surface according to a material of the bottom surface and is discriminated  
by black and white brightness.

9. The method of claim 8, wherein the image is captured by 1500  
frames per second so as to have 18\*18 pixels and 64-degrees brightness.

25

10. The method of claim 9, wherein the actual moving distance is calculated by dividing a pixel moving distance by a certain time, more preferable, 1/1500sec.

5 11. The method of claim 8, wherein a moving distance is measured according to direction of the pixel and magnitude of movement in the image in the displacement measuring step.

10 12. The method of claim 6, wherein it is judged the mobile robot is not moved, when each captured image is the same in comparison, it is judged the mobile robot is moved, when each captured image is not the same in comparison in the displacement measuring step.